

# LOS ANGELES COUNTY FISH AND GAME COMMISSION

## GRANT APPLICATION TITLE PAGE

TITLE OF PROJECT/PROGRAM Benthic Macroinvertebrate Identification

NAME OF ORGANIZATION RCD Santa Monica Mountains  
[As it appears on (501) (c) (3) IRS Letter]

ADDRESS 540 S Topanga Boulevard

CITY Topanga STATE CA ZIP CODE 90290

TELEPHONE NUMBER 818.597.8627 FAX NUMBER 818.597.8630

AMOUNT REQUESTED \$850.00

BOARD CHAIRPERSON Richard Brody

EXECUTIVE DIRECTOR Clark Stevens

CONTACT PERSON Lizzy Montgomery

TITLE Field Biologist

TELEPHONE NUMBER(S) 715-212-7679

AUDITED TOTAL INCOME 22890 AUDITED TOTAL EXPENSES 1126974

FOR FISCAL YEAR BEGINNING 2013 AND ENDING 2014

 3/23/16  
SIGNATURE OF BOARD CHAIRPERSON DATE

Note to Applicant: Please complete this title page and attach all grant application materials prior to submission.

One Page Project Summary

The RCDSMM has operated a benthic macroinvertebrate lab since 2001 that handles collection, identification, and analysis of freshwater benthic samples from Santa Monica Mountain creeks. Benthic macroinvertebrate (BMI) communities, made up of snails, worms, insect larvae, freshwater crustaceans, and other bottom-dwelling organisms of a freshwater stream, are a vital indicator of riparian ecosystem health (Ode et al. 2005). BMI sampling adds a biotic element to standard water quality testing procedures and is an invaluable tool for ecologists, resource management professionals, and anyone interested in investigating and maintaining healthy rivers (Fetscher et al. 2009). Data from the operation of a BMI lab at the RCDSMM has made possible two published reports on the effects of non-native crayfish in Topanga Creek and the relationship between rainfall and baetid mayfly populations in the Santa Monica Mountains. It has also supported drift net studies and fish nursery habitat evaluations that supplement endangered steelhead trout monitoring and recovery efforts.

Identification and analysis of samples relies on high resolution dissecting microscopes. The current microscopes utilized by RCDSMM technicians are too low-powered to identify many organisms past family or genus, which is required to perform a level two analysis as described by the Southwest Association of Freshwater Invertebrate Taxonomists. Additionally, the RCDSMM lacks proper storage for the hundreds of glass vials of BMI specimens preserved in ethanol that have been collected since 2001. As such, we request funding to purchase a stereo-zoom microscope with up to 90x magnification and camera. The camera will allow for photo documentation of specimens which will augment data collection efforts and reporting. The camera will also allow us to photograph and share steelhead trout scales for age analysis and to collaborate regional in species recovery efforts. In addition, funding is requested for ancillary equipment including a microscope illuminator, and replacement light bulbs. We also request funding for three storage crates as to properly and safely archive BMI samples.

Background on Applicant's Organization

Purpose and goals:

The RCDSMM has provided important resource management information to our constituents since 1961. We have a strong history of research, education, outreach, and implementation of watershed planning and restoration within the Santa Monica Mountains.

Brief summary of current activities:

The RCDSMM collects BMI samples regularly during annual amphibian surveys as part of SWAMP protocol, and semi-annual drift net surveys. BMI sampling also occurs during a variety of freshwater monitoring events and special research projects. Microscopes are also used to identify fish, fish scales, and other specimens collected during lagoon and creek monitoring and seine events.

Geographic area served:

The boundaries of the RCDSMM extend from Encino to Thousand Oaks, from the Chatsworth Reservoir south to the Ocean, and Catalina Island. Primary study sites include Topanga, Malibu, and Arroyo Sequit Creeks which are designated as habitat for endangered steelhead trout.

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Major sources and dollar amounts of corporate, foundation and government support during current and past fiscal year:

Although we have recieved grant funding for our steelhead lifecycle monitoring, we have supported the BMI work thanks to volunteer assistance. We have not had grant support for BMI in 2015 nor 2016.

History of all grants received from the Los Angeles County Fish and Game Commission:

January 2012 Malibu Water Quality Probe Maintenance \$3,977  
March 2012 Laptop for Wildlife Research \$2,500  
March 2012 Microscopes for Marine Science Program \$2,730  
April, 2013 Underwater Ultrasound DIDSON Camera Equipment \$2,000  
January 2014 Dive Equipment for Research Monitoring \$5,135  
January 2014 Restoration Tools \$1,685  
May 2015 Malibu Creek Sonde Replacement \$5,451

### Project Information

#### Statement of justification of need:

The RCDSMM is a non-profit organization dedicated to conservation research, restoration, and environmental outreach and education in the Santa Monica Mountains. As part of our freshwater monitoring programs, we collect and identify benthic macro-invertebrate samples to supplement water quality measurements, evaluate aquatic habitat conditions, and determine overall watershed health. The current microscopes operated by the RCDSMM are too low resolution to identify many specimens past taxonomic family. A higher resolution microscope with digital camera will allow for a more comprehensive data set on the benthic fauna of the Santa Monica Mountains.

#### Statement of purpose and goals:

- To continue benthic macroinvertebrate sampling and identification, with a higher degree of accuracy and taxonomic effort.
- To collect photographic evidence and create an archive of Santa Monica Mountain benthic fauna images.
- To create a better storage system for archived sample vials using sterilite crates.
- To provide opportunities for education and internship at the RCDSMM for individuals interested in BMI monitoring.
- To educate the public on the role of benthic macroinvertebrates in stream health, and which species live in the Santa Monica Mountains

#### Action plan to meet objectives:

The RCDSMM will continue to collect BMI samples in the field. Technicians will process samples and begin identification. An AmScope 3.5X-90X Stereo Zoom Microscope will be used to identify BMI present to genus and species. During identification, magnified photographs of BMI specimens will be taken with 3 mega pixel camera. Statistical analysis of results to characterize BMI community will be performed. All results of BMI analysis will be reported to project managers and interested public. A selection of photographs will be made publically available on the RCDSMM website.



Statement of how the objectives advance the propagation and protection of fish and wildlife:

Benthic macroinvertebrates are primary consumers and decomposers of stream detritus, diatoms, and macrophytes, and are a foundational link between aquatic and riparian vegetation and the rest of the stream community. In Topanga Creek, BMI are an important food item for aquatic reptiles and amphibians, Arroyo chub, and federally endangered southern California steelhead trout. The adult imago of many aquatic insects are an important food source for birds, bats, and other terrestrial insectivores, especially within riparian zones. Significant changes to the BMI community could have trophic repercussions for these and other wildlife. Long-term monitoring is important to monitor the benthic community and particularly to understand how it responds to disturbance such as drought and human development.

Project budget and timetable:

Dissecting Microscope	\$587.02	
Microscope Illuminator	\$219.98	
Microscope replacement bulb	\$9.78	
Illuminator replacement bulb	\$14.68	
Storage boxes ( 3, plus tax)	\$18.54	TOTAL BUDGET: \$850.00

Year 1: Purchase equipment, collect and process BMI samples planned for March, May, July, and November. Provide report of project outcomes to LACFGC.

Sources of other support for project:

-Stream team volunteers and interns are recruited on a as-needed basis to process BMI samples.

Current status of project:

The RCDSMM has collected and archived BMI samples in Santa Monica Creeks since 2001. During a water quality research project in collaboration with UCLA, the RCDSMM was able to borrow a high-powered microscope to process ten years of archived samples. Upon the project's completion, the microscope was returned. The RCDSMM has continued to analyze BMI collections with one dissecting microscope, without the magnification capacity to identify organisms past family or genus. This is akin to finding a member of the Sciuridae family but not being able to distinguish the animal between a squirrel and chipmunk! A number of BMI collections are planned for 2016 and beyond, and the RCDSMM is hoping to acquire a new scope with camera to better categorize local benthic fauna and share results with the public.

Cash flow analysis of the expenditure of project funds:

Equipment would be purchased as soon as funds are available.

Proposed method of evaluating results:

The success of this proposal to acquire a high-powered microscope and ancillary lab equipment will hinge upon the achievement of the following:

1. All archived BMI samples in glass vials will be safely and securely archived.
2. Future collections of aquatic insects will be identified past family.
3. Photographs of taxa present will be taken and shared with the freshwater biology community as well as the public to promote scientific collaboration and public stewardship of land and waters.
4. Results of BMI analysis will be included in 2017 Lifecycle monitoring report.

Plans for funding on-going project (if applicable):

To date, volunteers collect and process BMI samples. Other grants have provided minimal funds for BMI lab equipment.

Progress reports (bi-yearly or upon completion, whichever occurs first):

Within 1 year of receiving funding, the RCDSMM will provide a progress report to LACFGC to describe project outcomes to date.

Please Attach the Following Supporting Documents:

- Description of Organizational Structure or Organizational Chart
- Copy of the Latest IRS Determination Letter of Tax Exempt Status under Section 501(c) (3)
- Most Recent Audited Financial Statement
- Most Recent IRS Form 990

## ATTACHMENT A

### CALIFORNIA FISH AND GAME CODE

#### § 13103. Expenditures from fish and wildlife propagation fund; purposes

Expenditures from the fish and wildlife propagation fund of any county may be made only for the following purposes:

- (a) Public education relating to the scientific principles of fish and wildlife conservation, consisting of supervised formal instruction carried out pursuant to a planned curriculum and aids to education such as literature, audio and video recordings, training models, and nature study facilities.
- (b) Temporary emergency treatment and care of injured or orphaned wildlife.
- (c) Temporary treatment and care of wildlife confiscated by the department as evidence.
- (d) Breeding, raising, purchasing, or releasing fish or wildlife which are to be released upon approval of the department pursuant to Sections 6400 and 6401 onto land or into waters of local, state or federal agencies or onto land or into waters open to the public.
- (e) Improvement of fish and wildlife habitat, including, but not limited to, construction of fish screens, weirs, and ladders; drainage or other watershed improvements; gravel and rock removal or placement; construction of irrigation and water distribution systems; earthwork and grading fencing; planting trees and other vegetation management; and removal of barriers to the migration of fish and wildlife.
- (f) Construction, maintenance, and operation of public hatchery facilities.
- (g) Purchase and maintain materials, supplies, or equipment for either the department's ownership and use or the department's use in the normal performance of the department's responsibilities.
- (h) Predator control actions for the benefit of fish or wildlife following certification in writing by the department that the proposed actions will significantly benefit a particular wildlife species.

(i) Scientific fish and wildlife research conducted by institutions of higher learning, qualified researchers, or governmental agencies, if approved by the department.

(j) Reasonable administrative costs, excluding the costs of audits required by Section 13104, for secretarial service, travel, and postage by the county fish and wildlife commission when authorized by the county board of supervisors. For purposes of this subdivision, "reasonable cost" means an amount which does not exceed 3 percent of the average amount received by the fund during the previous three-year period, or three thousand dollars (\$3,000) annually, whichever is greater, excluding any funds carried over from a previous fiscal year.

(k) Contributions to a secret witness program for the purpose of facilitating enforcement of this code and regulations adopted pursuant to this code.

(l) Cost incurred by the district attorney or city attorney in investigating and prosecuting civil and criminal actions for violations of this code, as approved by the department.

(m) Other expenditures, approved by the department, for the purpose of protecting, conserving, propagating, and preserving fish and wildlife.

(Amended by Stats.1990, c 764 (A.B. 4039), § 3; Stats.1991, c. 561 (A.B.722), § 2.)





**RESOURCE**  
CONSERVATION DISTRICT  
OF THE  
SANTA MONICA MOUNTAINS

818.597.8627 | phone  
818.597.8630 | fax  
info@rcdsmm.org

540 South Topanga Canyon Boulevard  
Topanga, California 90290

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Clark Stevens

March 22, 2016

County of Los Angeles  
Fish and Game Commission

Dear Commissioners,

In compliance with the request for supporting documents relevant to the fiscal status of the Resource Conservation District of the Santa Monica (RCDSMM), we provide the following information.

The RCDSMM, a subdivision of the State of California, is a local government special district organized under division 9 of the CA Public Resources Code.

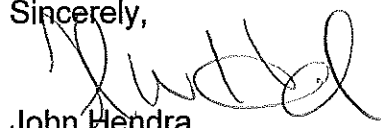
Internal Revenue Code (IRC) Section 115 states that the gross income of a subdivision of a state is not taxable by the Federal government.

IRC Section 170(c)(1) states that contributions to subdivisions of a state are tax deductible as long as they are used for public purposes.

Therefore, the RCDSMM does not submit forms or pay federal income tax and contributions to the RCDSMM are tax deductible.

We appreciate the support of Supervisor Kuehl for our efforts to provide important resource management information that will help protect and preserve the Santa Monica Mountains.

Sincerely,

  
John Hendra  
Operations Manager

